

UTILITY OF HALOSULFURON FOR CONTROL OF VOLUNTEER HORSERADISH. Nathan R. Johanning, Bryan G. Young, and S. Alan Walters, Graduate Research Assistant, Professor, and Associate Professor, Plant, Soil, and Agricultural Systems, Southern Illinois University, Carbondale, IL 62901.

Horseradish (*Armoracia rusticana*) is commonly grown in rotation with other agronomic field crops. Due to the perennial growth habit of horseradish, volunteer plants often emerge at high densities in these crops. Volunteer horseradish plants do not generally cause significant yield loss in agronomic crops although volunteer plants reduce the benefit of crop rotation. These volunteer plants serve as hosts of major horseradish soil-borne pathogens and can lead to mixed cultivars since the crop is asexually propagated.

The efficacy of fall applications of 2,4-D, glyphosate, 2,4-D plus glyphosate, dicamba, 2,4-D plus iodosulfuron, 2,4-D plus rimsulfuron and thifensulfuron, and 2,4-D plus halosulfuron were evaluated on volunteer horseradish. Treatments were applied to soybean stubble after harvest where the crop prior to soybeans was horseradish. All herbicide applications demonstrated reduced volunteer horseradish density the following spring. A greater reduction in volunteer horseradish density was observed in treatments containing 2,4-D or dicamba, compared with glyphosate applications alone. Volunteer horseradish plants were reduced the greatest by applications of halosulfuron plus 2,4-D.

The corn herbicide halosulfuron has utility in control of volunteer horseradish, but there are concerns about the safe replant interval for horseradish after the application of halosulfuron. From 2005 to 2007, studies evaluated the injury to commercial horseradish root segments planted at 0, 1, 2, 4, 10, and 12 months after the application of halosulfuron. Applications of 0.5, 1, and 2X the standard field use rate in corn were used to simulate applications of reduced rate, labeled rate, and overlap in a field situation. No differences in plant injury from halosulfuron were observed between the two horseradish cultivars '1038' and '1573'. When only half the standard rate of halosulfuron was applied, no injury was seen one month after herbicide application. Furthermore, after 10 months, no significant injury was observed with halosulfuron at 1 or 2X the standard field use rate. Currently, the label for halosulfuron in corn restricts the planting of horseradish to 18 months. This research suggests that a shorter replant interval may be possible and allow for greater utility of halosulfuron for management of volunteer horseradish in rotational crops.